

# EUROPEAN PATENT OFFICE

## Pat nt Abstracts of Japan

PUBLICATION NUMBER : 63206721  
PUBLICATION DATE : 26-08-88

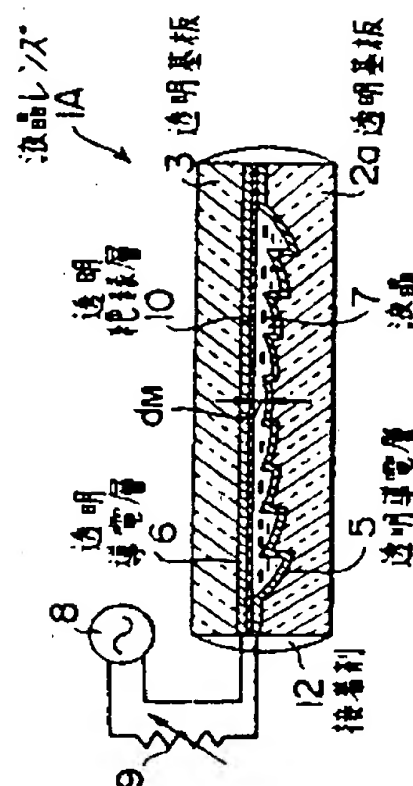
APPLICATION DATE : 23-02-87  
APPLICATION NUMBER : 62041079

APPLICANT : OLYMPUS OPTICAL CO LTD;

INVENTOR : TODA AKITOSHI;

INT.CL. : G02F 1/13

TITLE : LIQUID CRYSTAL LENS



ABSTRACT : PURPOSE: To permit formation of an extremely thin liquid crystal layer by providing a transparent insulating layer on at least one of transparent conductive layers to constitute a titled lens in such a manner that the transparent conductive layers are not shorted from each other and disposing no spacer materials between the two transparent conductive layers.

CONSTITUTION: The lens 1A is formed by providing the transparent conductive layers 5, 6 respectively on the opposed surface of flat plate glass 3 consisting of a transparent substrate and a Fresnel lens 2a having grooves for Fresnel provided with peaks flush with each other, superposing the flat plate glass 3 and the Fresnel lens 2a in such a manner that the two conductive layers 5, 6 face each other, coating adhesive agents 12 on the peripheral faces of both the glass and the lens to integrate the glass and the lens and sealing a liquid crystal 7 into the space formed between the two conductive layers 5 and 6. The space for sealing of the liquid crystal is assured even if the liquid crystal lens is formed by sticking the transparent substrates having a lens shape to each other. The lens having the optical characteristics substantially equal to the optical characteristics of the liquid crystal lens formed by using the spacer are obtd. An electrical insulation is provided to the lens by providing the transparent insulating layer 10 on at least one of the conductive layers 6.

COPYRIGHT: (C)1988,JPO&Japio